30 December 2008

This supplement has been prepared to present scientific and technical news items that may be of more interest to technical personnel at RDT&E activities and the labs, or the medics rather than the broader readership of the basic CB Daily. Due to the nature of the material, the articles, if available online, are usually only available through subscription services thus making specific links generally unavailable. Thus, usually only the bibliographic citation is available for use by an activity's technical library.

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Chem-Bio News– Pandemic Influenza Edition # 41

1. SURGING FLU CASES MAY HERALD TOUGH SEASON IN ENGLAND: *"While the US influenza season has started slowly, cases are surging in England, raising concern that the country could have its toughest season since 1999-2000."*

2. EU PANEL SUPPORTS INNOVATIVE PANDEMIC, SEASONAL FLU VACCINES: *"An H5N1 influenza vaccine made by Baxter International could become the first cell culture–based H5N1 influenza vaccine to be approved for marketing, following its endorsement by a committee of the European Medicines Agency (EMEA) last week."*

3. NARITA AIRPORT OPERATOR WORKS OUT ACTION PLAN AGAINST NEW INFLUENZA: *"The action plan compiled by Narita International Airport Corp calls for ensuring the safety of passengers and airport officials by stockpiling 10,000 pills of the anti-flu drug Tamiflu and 50,000 flu masks, the sources said."*

4. WITH H1N1 RESISTANCE, CDC CHANGES ADVICE ON FLU DRUGS: *"Increased resistance to oseltamivir (Tamiflu), the leading influenza drug, has prompted federal health officials to change their advice about flu treatment, saying clinicians for now should consider using zanamivir (Relenza) or a combination of two drugs for patients suspected of having influenza A."*

5. FLU WATCHDOG LAB PLANNED: *"A surveillance lab to monitor different strains of influenza will be established in Bahrain with the support of the World Health Organisation (WHO)."*

6. OSELTAMIVIR-RESISTANT INFLUENZA A VIRUSES ARE TRANSMITTED EFFICIENTLY AMONG GUINEA PIGS BY DIRECT CONTACT BUT NOT BY AEROSOL: *"The present results suggest that oseltamivir resistance mutations reduce aerosol transmission of influenza virus, which could have implications for public health measures taken in the event of an influenza pandemic."*

CB Daily Report

Chem-Bio News

SURGING FLU CASES MAY HERALD TOUGH SEASON IN ENGLAND
By Robert Roos
CIDRAP News (Center for Infectious Disease Research & Policy – University of Minnesota)
December 24, 2008

“While the US influenza season has started slowly, cases are surging in England, raising concern that the country could have its toughest season since 1999-2000.

In England and Wales last week, about 68.5 people per 100,000 saw a general practitioner for influenza-like illness (ILI), a 73% increase over the 39.5 per 100,000 the week before, according to the latest weekly report from the Royal College of General Practitioners (RCGP). A BBC News report said the number also is73% higher than the same week a year ago.

Dr. Douglas Fleming, director of the RCGP Research Unit in Birmingham, said the increase was significant, according to BBC News. "In the past 10 years, the only substantial outbreak was in 1999-2000," he said. "I think we could be looking at something that approaches that this year."

The full article can be found at: http://www.cidrap.umn.edu/cidrap/content/influenza/general/news/dec2408england.html

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EU PANEL SUPPORTS INNOVATIVE PANDEMIC, SEASONAL FLU VACCINES
By Robert Roos
CIDRAP News (Center for Infectious Disease Research & Policy – University of Minnesota)
December 22, 2008

“An H5N1 influenza vaccine made by Baxter International could become the first cell culture–based H5N1 influenza vaccine to be approved for marketing, following its endorsement by a committee of the European Medicines Agency (EMEA) last week.

Recommendations of the Committee for Medicinal Products for Human Use (CHMP) are usually followed by the EMEA within a few months.

Most flu vaccines, including the two H5N1 prepandemic vaccines now licensed, are grown in chicken eggs, a process that takes about 4 to 6 months. Baxter's H5N1 vaccine, called Celvapan, is grown in Vero (monkey kidney) cells. Cell culture production is regarded as somewhat faster and much more flexible than the egg-based method.

Also last week, the CHMP recommended EMEA approval of a Sanofi Pasteur seasonal flu

vaccine that is injected intradermally (ID)—just beneath the skin surface—instead of into muscle. "This represents the first key step toward recognition of the ID route as a promising option for vaccine administration," the company said in a news release."

The full article can be found at: http://www.cidrap.umn.edu/cidrap/content/influenza/panflu/news/dec2208eurovax-jw.html

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NARITA AIRPORT OPERATOR WORKS OUT ACTION PLAN AGAINST NEW INFLUENZA
JapanToday
December 27, 2008

"The operator of Narita International Airport has outlined an action plan to interdict the inflow of new types of influenza, sources close to the plan said Saturday. The action plan compiled by Narita International Airport Corp calls for ensuring the safety of passengers and airport officials by stockpiling 10,000 pills of the anti-flu drug Tamiflu and 50,000 flu masks, the sources said. To ensure smooth runway operations continue in the event a new type of flu breaks out at the airport, the action plan proposes training more airport officials tasked with guiding airplanes."

The full article can be found at: http://www.japantoday.com/category/national/view/narita-airport-operator-works-out-action-plan-against-new-influenza

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WITH H1N1 RESISTANCE, CDC CHANGES ADVICE ON FLU DRUGS
By Robert Roos and Lisa Schnirring
CIDRAP News (Center for Infectious Disease Research & Policy – University of Minnesota)
December 19, 2008

"Increased resistance to oseltamivir (Tamiflu), the leading influenza drug, has prompted federal health officials to change their advice about flu treatment, saying clinicians for now should consider using zanamivir (Relenza) or a combination of two drugs for patients suspected of having influenza A.

The Centers for Disease Control and Prevention (CDC) today said 49 of 50 influenza A/H1N1 viruses tested so far this season have shown resistance to oseltamivir. But all the isolates remained sensitive to zanamivir and to the two older flu drugs, amantadine and rimantadine.

H1N1 is one of the three viral types and subtypes included in season flu vaccine; the others are A/H3N2 and B.

"When influenza A (H1N1) virus infection or exposure is suspected, zanamivir or a combination of oseltamivir and rimantadine are more appropriate options than oseltamivir,"

the CDC said in today's advisory. "Local influenza surveillance data and laboratory testing can help with physician decision-making regarding the choice of antiviral agents for their patients."

But Dr. Anthony Fiore, a medical epidemiologist in the CDC's Influenza Division, said rapid flu tests don't identify the viral subtype, and many areas don't have good flu surveillance data. "This problem really does complicate deciding what kind of antiviral to use," he told CIDRAP News."

The full article can be found at: http://www.cidrap.umn.edu/cidrap/content/influenza/general/news/dec1908tamiflu.html

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FLU WATCHDOG LAB PLANNED
By Mandeep Singh
Gulf Daily News
December 29, 2008

"A SURVEILLANCE lab to monitor different strains of influenza will be established in Bahrain with the support of the World Health Organisation (WHO).

It will be tasked with reviewing the country's action plan in the event of a possible outbreak of bird flu, a top Health Ministry official told the GDN yesterday.

The new lab, which will be located at the Public Health Directorate, is the result of a visit by a WHO team last week."

"The two-member team consisted of Dr Hala Ismat from the WHO Eastern Mediterr-anean Regional Office, Cairo, and Dr Atif Sulaiman, a virus department senior researcher from the American Medical Research Unit, who is also a WHO consultant.

"This will be the first reference laboratory in Bahrain and all findings will be the basis of co-ordination with the WHO," added Dr Al Mousawi."

The full article can be found at: http://www.gulf-daily-news.com/Story.asp?Article=238809&Sn=BNEW&IssueID=31284

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OSELTAMIVIR-RESISTANT INFLUENZA A VIRUSES ARE TRANSMITTED EFFICIENTLY AMONG GUINEA PIGS BY DIRECT CONTACT BUT NOT BY AEROSOL
Drug Week
December 26, 2008

“"Influenza viruses resistant to the neuraminidase (NA) inhibitor oseltamivir arise under drug selection pressure both in vitro and in vivo. Several mutations in the active site of the viral NA are known to confer relative resistance to oseltamivir, and influenza viruses with certain oseltamivir resistance mutations have been shown to transmit efficiently among cocaged ferrets."

"However, it is not known whether NA mutations alter aerosol transmission of drug-resistant influenza virus. Here, we demonstrate that recombinant human influenza A/H3N2 viruses without and with oseltamivir resistance mutations (in which NA carries the mutation E119V or the double mutations E119V I222V) have similar in ovo growth kinetics and infectivity in guinea pigs. These viruses also transmit efficiently by the contact route among cocaged guinea pigs, as in the ferret model. However, in an aerosol transmission model, in which guinea pigs are caged separately, the oseltamivir-resistant viruses transmit poorly or not at all; in contrast, the oseltamivir-sensitive virus transmits efficiently even in the absence of direct contact.”

"The present results suggest that oseltamivir resistance mutations reduce aerosol transmission of influenza virus, which could have implications for public health measures taken in the event of an influenza pandemic."

The full article can be found at: (N.M. Bouvier, et. al., “Oseltamivir-Resistant Influenza A Viruses Are Transmitted Efficiently among Guinea Pigs by Direct Contact but Not by Aerosol”. Journal of Virology, 2008;82(20):10052-10058). Link not available.

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